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FIG.4 Encoding Of Card For Issue To Authorized User

100 — Make ID card with mag-stripe data storage element on reverse of card and photo of card owner on face of card

102 — Present card data storage microstructure signature to scanner at card issuance site

104 — Scan and digitize mag-stripe microstructure with DeLand enabled scanner

106 — Apply first encoding algorithm to extract and encode features from digitized microstructure

108 — Derive first reference data element

110 — Provide fingerprint to biometric scanner at card issuance site

112 — Scan and digitize fingerprint image

114 — Apply second encoding algorithm to extract and encode features from digitized fingerprint image

116 — Derive second reference data element

118 — Present card face image input to card face image scanner at card issuance site

120 — Scan and digitize card face

122 — Apply third encoding algorithm to extract and encode features from digitized card face image

124 — Derive third reference data element

126 — Apply fourth encoding algorithm to first, second and third reference data elements to derive combined encoded data element

128 — Store combined encoded data element on mag-stripe data storage element of ID card

130 — Issue card to authorized user

140 Present ID card mag-stripe data storage element to card reader at transaction site

142 Read encoded data element on ID card

144 Apply first decoding algorithm to encoded data element

146 Recover first, second and third reference data elements

148 Scan and digitize mag-stripe microstructure with DeLand enabled scanner

150 Apply first encoding algorithm to extract and encode features from digitized microstructure

152 Derive first live data element

154 Compare first live data element against first reference data element

156 valid ?

158 Deny transaction

160 Apply live fingerprint to biometric scanner at card transaction site

162 Scan and digitize fingerprint image

164 Apply second encoding algorithm to extract and encode features from digitized fingerprint image

166 Derive second live data element

168 Compare second live data element against second reference data element

170 valid ?

172 Deny transaction

174 Present ID card face to card face imager at transaction site

178 Scan and digitize card face

180 Apply third encoding algorithm to extract and encode features from digitized card face image

182 Derive third live data element

184 Compare third live data element against third reference data element

186 valid ?

188 Deny transaction

190 Authorize transaction

FIG. 5   Local Validation Of Card At Transaction Site